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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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7590 04/08/2005

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EXAMINER

KAO, CHIH CHENG G

ART UNIT	PAPER NUMBER
2882	

DATE MAILED: 04/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

09/620,943

Applicant(s)

KELLER ET AL.

Examiner

Chih-Cheng Glen Kao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,3,5,6 and 18-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,3,5,6 and 18-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 September 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The proposed drawings filed 04/17/02 have been approved.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2, 3, 5, 6, 18, 20, and 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoen (US Patent 6,253,001) in view of Wingo (US Patent 5796884) and Laor (US Patent 6101299).

3. With regards to claims 18 and 23, Hoen discloses an optical, path-to-sight link, comprising light beams (col. 5, line 55) steered by a controllable beam steering device (Fig. 1, #16) with predetermined control signals (col. 3, lines 5-6) having a plurality of two axis rotatable mirrors capable of being rotated in a single axis (Fig. 6), and an actuator (col. 4, lines 25-28) with inherent control signals.

However, Hoen does not disclose a transmitter with a light source and micromirrors, a receiver with a photodetector, and a controller responsive to the position of light in the receiver with a separate control coupling control of the micromirror and receiver by a circuit.

Wingo teaches the light source and photodetector as a transmitter and receiver (col. 1, lines 55-69). Laor teaches a transmitter with a light source (Fig. 19, #110) and micromirrors (Fig. 19, #98), a receiver with a photodetector (Fig. 19, #90), and a controller responsive to the position of light in the receiver with a separate control coupling control of the micromirror and receiver by a circuit. (col. 7, lines 5-13).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the device of Hoen with the transmitter and receiver of Wingo, since these components are considered art-recognized equivalents in that they both emit and receive light. It would have been within routine skill in the art to substitute one for another. One

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would be motivated to have a transmitter and receiver to send data for telecommunications (col. 1, lines 1-25) as implied from Wingo.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the suggested device of Hoen in view of Wingo with the separate control, receiver, and transmitter of Laor, since one would be motivated to have these components for better alignment of the transmission pathways as shown by Laor (col. 7, lines 5-13).

4. With regards to claim 2 and 24, Hoen further discloses having a plurality of two axis rotatable mirrors capable of being rotated in any orientation (Fig. 1, #22, and Fig. 6).

5. With regards to claim 3 and 25, Hoen further discloses having a plurality of two axis rotatable mirrors capable of being rotated in a single axis (Fig. 1, #22, and Fig. 6).

6. With regards to claim 5 and 26, Hoen further discloses mirrors comprising silicon (col. 9, lines 56-60).

7. With regards to claim 6 and 27, Hoen further discloses mirrors comprising metal (col. 9, lines 56-60).

8. With regards to claim 20, Hoen in view of Wingo and Laor suggests a device as recited above.

However, Hoen does not disclose a circuit detecting light on the photodetector and generating a detection signal as a control signal to the controller.

Laor teaches disclose a circuit detecting light on the photodetector (Fig. 19, #90) and generating a detection signal as a control signal to the controller (Fig. 19, #104).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the suggested device of Hoen in view of Wingo and Laor with a circuit for a detection signal as a control signal, since one would be motivated to have these components for better alignment of transmission pathways (col. 7, lines 5-13) as shown by Laor.

9. Claims 19, 22, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoen in view of Wingo and Laor as applied to claim 18 and 23 above, and further in view of Abeles et al. (US Patent 6014237).

Hoen in view of Wingo and Laor suggests a system as recited above.

However, Hoen does not disclose modulation and demodulation for Ethernet protocol.

Abeles et al. teaches modulation and demodulation (Abstract, lines 13-20 and col. 14, lines 28-32)) for a variety of protocols including Ethernet (col. 7, lines 9-12 and 18-20).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the system of Hoen in view of Wingo and Laor with the modulation, demodulation, and Ethernet protocol of Abeles et al., since one would be motivated to utilize a system that has far fewer components than conventional optical transmission systems and having a potential for much larger bandwidths to process greater amounts of information as shown by Abeles et al. (col. 2, lines 45-52, and col. 1, lines 40-46).

10. Claims 21 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoen in view of Wingo and Laor as applied to claim 18 and 23 above, and further in view of Duguay (US Patent 5,671,304).

Hoen in view of Wingo and Laor suggests a system as recited above.

However, Hoen does not disclose a VCSEL laser diode.

Duguay teaches a VCSEL laser diode (col. 6, lines 22-24).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the system of Hoen in view of Wingo and Laor with the VCSEL laser diode of Duguay, since one would be motivated to utilize its extremely high performance levels as shown by Duguay (col. 2, lines 26-39) for strong signals, as well as cost and size purposes.

Response to Arguments

11. Applicant's arguments filed 1/11/05 have been fully considered but they are not persuasive.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "not employing a separate optical means for aligning the mirror to the optical path") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.

As presently claimed, a controller is responsive to the position of light in the receiver. However, because of the open-ended nature of the term “comprising”, the claim does not exclude additional, unrecited elements, such as a separate optical means for aligning the mirror to the optical path in the receiver. Therefore, having a separate optical means for aligning the mirror to the optical path does read on the claims. Applicants’ arguments are not persuasive, and the claims remain rejected.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (571) 272-2492. The examiner can normally be reached on M - F (9 am to 5 pm).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

gk



EDWARD L. GLICK
SUPERVISORY PATENT EXAMINER